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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/765,256

01/26/2004

Srikanth Varanasi

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EXAMINER

CHEN, BRET P

ART UNIT

PAPER NUMBER

1792

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/765,256	<b>Applicant(s)</b> VARANASI ET AL.	
	<b>Examiner</b> Bret Chen	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-20 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-20 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1792

### **DETAILED ACTION**

Claims 1-14, 16-20, 27-29 are pending in this application. Amended claims 1 and 16 are noted.

The amendment dated 10/7/08 has been entered and carefully considered. The examiner appreciates the amendment to the claims. In view of said amendment, the previous art rejection has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claims 1-14, 16-20, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halaby et al. (3,892,888) in view of Robinson et al. (2002/0135099) or vice versa and further in view of McCurdy (6,238,738).**

Halaby discloses a method of making a magnetite film or gamma ferric oxide film magnetic recording and storage device comprising the step of depositing a film of elemental iron, alpha ferric oxide, or magnetite on an inorganic and non-magnetic substrate by chemical vapor deposition (col.1 lines 36-49). The substrate can be in the form of a disk, tape, rod, drum or wire and can be aluminum, glass, glass-ceramic or ceramic that can withstand without damage the high temperatures encountered in the method of this invention (col.2 lines 15-23) and can be heated to 300°C (col.2 lines 52-54). The precursor can be ferrocene and can be transported by the use of an inert or reducing carrier gas (col.2 lines 54-69) and the carrier gas can be oxygen (col.6 lines 1-18). It should be noted that the final film can be alpha ferric oxide (col.5 lines 63-

Art Unit: 1792

65). Nitrogen can be used as an inert gas (col.4 lines 1-25). However, the reference fails to teach a float glass process.

Robinson discloses a method of using float glass having a  $\text{SnO}_2$  enriched surface, wherein the method includes the steps of providing an ionic release agent externally to the tin oxide surface (par 9). Specifically, the reference teaches the conventionality of making a float glass wherein the molten glass is allowed to float on a liquid pool of tin which results in one side of the glass having a tin enriched surface as opposed to the air-side of that same piece of glass (par 54). A metal oxide coating such as  $\text{Fe}_2\text{O}_3$  can be formed (par 55). In one embodiment, two or more layers are contemplated (par 55). It would have been obvious to incorporate the float glass substrate of Robinson in Halaby's process with the expectation of obtaining similar results.

In addition, Robinson's process is silent on specific precursors for forming  $\text{Fe}_2\text{O}_3$  layers. Halaby discloses the conventionality of using ferrocene and an oxidant. It would have been obvious to incorporate Halaby's precursors in Robinson's process with the expectation of success.

In newly amended claim 1, the applicant requires premixing the precursors to form a uniform gaseous precursor mixture and then directing the precursor mixture toward the surface. McCurdy specifically teaches of depositing a metal oxide coating on flat glass by preparing a precursor mixture containing the corresponding metal tetrachloride and an organic oxygen containing compound as a source of oxygen for formation of the metal oxide and then introducing the precursor mixture into the coating chamber to cause deposition on to the hot glass surface (col.4 lines 18-35). In one embodiment, a float glass procedure is utilized (col.9 lines 38-52). It is noted that McCurdy specifically teaches of forming a precursor mixture then

Art Unit: 1792

introducing the mixture to the coating chamber to form a metal oxide. It would have been obvious to utilize the precursor mixture in the process of Halaby and Robinson with the expectation of obtaining similar results because McCurdy teaches the conventionality using a precursor mixture to form the metal oxide. The same issue applies to independent claim 16.

The limitations of claims 2-3, 13 have been addressed above.

In claim 4, the applicant requires a cooling step. Eventually the final product will be cooled to room temperature thus meeting the limitation.

In claim 5, the applicant requires a specific inert carrier gas such as nitrogen. This limitation is met in col.4 lines 8-9.

In claim 6, the applicant requires a specific deposition rate. Halaby teaches a similar deposition rate in col.3 lines 1-36. Regardless, it would have been obvious to have a fast deposition rate with the expectation of improving deposition efficiency.

In claims 7-12, the applicant requires a specific concentration. Halaby teaches a similar concentration in col.4 line 1 – col.5 line 7. Regardless, it is well known to vary composition to optimize the characteristics of the final product and hence, would have been obvious to vary the composition do with the expectation of obtaining the desired final properties.

In claim 14, the applicant requires dissolving ferrocene in a solvent. Halaby teaches of dissolving ferrocene in benzene (col.2 lines 66-67) and thus meets the limitation of the claim.

In claim 16, the applicant requires an additional coating. This is met in col.7 lines 1-52.

The limitations of claims 17-20 and 29 have been addressed above.

Art Unit: 1792

**Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halaby et al. (3,892,888) in view of Robinson et al. (2002/0135099) or vice versa and further in view of McCurdy (6,238,738) and Higby (5,780,372).** The combination of Halaby and Robinson disclose a method of forming a ferric oxide film on a glass substrate using ferrocene as noted above while McCurdy teaches the conventionality of using a precursor mixture. However, the references fail to teach the use of iron oxide coatings in architectural glazings.

Higby teaches the conventionality of using iron oxide in architectural glazings. It would have been obvious to utilize the coating produced by the combination of Halaby and Robinson for architectural glazings because Higby teaches the conventionality of doing same.

### ***Response to Arguments***

Applicant's arguments with respect to claims above have been considered but are moot in view of the new ground(s) of rejection.

Applicant first argues that there is nothing in the art to suggest premixture of the reactants to form a uniform gaseous precursor mixture (p.8 third paragraph).

This issue has been addressed above with McCurdy.

Applicant next argues that Halaby and Robinson are directed to two totally different subject matters and that one skilled in the art would not be motivated to combine two dissimilar references (p.8 4th paragraph).

The examiner disagrees. Halaby teaches of forming a ferric oxide film on a glass substrate. Robinson teaches the conventionality of forming a metal oxide on a float glass substrate. While the examiner concedes that the references are classified in two different areas,

Art Unit: 1792

it would not be beyond one skilled in the art to combine the references as both teach forming a metal oxide film on a glass substrate.

Applicant next argues that Halaby's process are not consistent with an on-line float glass process and that Robinson's float glass process would be incompatible with the batch process of Halaby (paragraph bridging pp.8-9).

The examiner disagrees. There is nothing recited in Halaby which prevents the use of a float glass process nor is there any recitation in Robinson which prevents the precursors of Halaby from being used. Regardless, if the two are incompatible, how does the applicant get it to work? It must be something that is not presently recited in the instant claims.

Applicant next argues that there is nothing to suggest premixing the reactants and delivering it to the glass for reacting as in claim 16 (p.9 second full paragraph).

This issue has been addressed above with McCurdy.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1792

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bret Chen whose telephone number is (571)272-1417. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bret Chen/

Primary Examiner, Art Unit 1792

1/13/09